

Eric Takeo Funasaki

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Department of Computer Science and Mathematics
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Education

PhD in Mathematics. University of Tennessee, Knoxville. Knoxville, TN. May 1997.
MS in Applied Mathematics. University of Washington. Seattle, WA. June 1992.
BS in Mathematics (with distinction). Harvey Mudd College. Claremont, CA. May 1990.

Professional Experience

Sul Ross State University. Alpine, TX. 2014-present.
Portland Community College. Newberg, OR and Portland, OR. 2010-2013.
George Fox University. Newberg, OR. 2005-2010.
University of Montana-Western. Dillon, MT. 2002-2005.
Georgia Southern University. Statesboro, GA. 1996-2002.

Professional Associations

American Mathematical Society
Resource Modeling Association

Publications

- Henson, S.M., R.A. Desharnais, E.T. Funasaki, J.G. Galusha, J.W. Watson, and J.L. Hayward. 2019. Predator-prey dynamics of bald eagles and glaucous-winged gulls at Protection Island, Washington, USA. *Ecology and Evolution*. 9(7): 3850-3867.
- Hallam, T.G. and E.T. Funasaki. 1999. Complexity and Emergence in Models of Chemically Stressed Populations. In *Tempos in Science and Nature: Structure, Relations, and Complexity*. C. Rossi, S. Bastianoni, A. Donati, and N. Marchettini, Eds. New York Academy of Sciences: New York.
- Hallam, T.G. and E.T. Funasaki. 1997. Indicators of Chemical Stressor Levels Derived from Population Time Series: A Retrospective Approach. In *Environmental Toxicology and Risk Assessment: Modeling and Risk Assessment (Sixth Volume)*, ASTM STP 1317. F. James Dwyer, Thomas R. Doane, and Mark L. Hinman, Eds.

American Society for Testing and Materials: Philadelphia, PA.

Hallam, T.G., E.T. Funasaki, K. Lika, and H.L. Lee. 1997. Utility of Dynamics as Indicators of Stress in Population Models. *Environmental Modeling and Assessment*. 2: 1-6.

Funasaki, E. and M. Kot. 1993. Invasion and Chaos in a Periodically Pulsed Mass-Action Chemostat. *Theoretical Population Biology*. 44(2): 203-224.

Research and Professional Presentations

World Conference on Natural Resource Modeling. Montreal, Canada. May 2019. Presentation: A predator-prey model for bald eagles and colonial seabirds in the Pacific Northwest of North America (with Dr. Shandelle Henson, Andrews University)

Joint Mathematics Meetings. Baltimore, MD. January 2019. Presentation: Predator-prey dynamics of bald eagles and glaucous-winged gulls at Protection Island, Washington

Joint Mathematics Meetings. San Diego, CA. January 2018. Invited Presentation: Transient predator-prey cycles in bald eagles and glaucous-winged gulls at Protection Island, WA (in the AMS Special Session on Mathematical Modeling of Natural Resources)

Oregon Academy of Sciences. Portland, OR. February 2008. Poster Presentation: Periodic Population Pulses in a SEIR Model for Childhood Diseases (given by Kimberly Cullen, George Fox University undergraduate)

Joint Mathematics Meetings. Washington DC. January 2000. Poster Presentation: Survival of a Consumer with a Periodic Feeding Schedule in a Periodically Pulsed Mass Action Chemostat (given by Carrie Williams, Georgia Southern University undergraduate)

MAA Southeastern Section Meeting. College of Charleston. Charleston, SC. March 1998. Presentation: Competition in a Periodically Pulsed Chemostat (given by Angel Rowe, Georgia Southern University graduate student)

12th International Symposium on the Mathematical Theory of Networks and Systems. Washington University. St. Louis, MO. June 1996. Invited Presentation: Estimation of Toxicant Levels in a Chemically Stressed Population Model from Summary Statistics and Population Level Parameters (in the Mathematical Modeling in Population Biology session)

Joint Mathematics Meetings. San Francisco, CA. January 1995. Invited Presentation: Retrospective Risk Assessment of an Individual-based Daphnia Population Model (in the AMS Special Session on Environmental Modeling)

International Conference on Differential Equations with Applications to Biology and to Industry. Harvey Mudd College. Claremont, CA. June 1994. Poster Presentation: Dynamics of an Individual-based Daphnia Population Model

Southeast Regional Mathematical Biology Meeting. Highlands, NC. March 1993. Presentation: Invasion and Chaos in a Periodically Pulsed Mass-Action Chemostat

Northwest Regional Mathematical Biology Meeting. University of British Columbia. Vancouver, Canada. March 1991. Presentation: Dynamics of a Periodically Pulsed Chemostat

Other Affiliations and Involvement

Professional Experience Details

May 2017 to present

Strategic Plan Coordinator
Office of Institutional Effectiveness
Sul Ross State University
Alpine, TX

Responsible for overseeing the implementation of the eighty-eight strategies in the 2017-2022 Sul Ross Strategic Plan along with Dr. Gina Stocks, Assistant Strategic Plan Coordinator. Work with over twenty-five faculty, staff, and administrators at all Sul Ross campuses; prepare the Strategic Plan Annual Report and Annual Report Summary each year; and present a report on the Strategic Plan to the university's President and Executive Cabinet each year.

August 2014 to present

Assistant Professor of Mathematics
Department of Computer Science and Mathematics
Sul Ross State University
Alpine, TX

Teaching

Semester courses scheduled to teach (Fall 2020):

- Elementary Statistical Methods (with dual credit students)
- Linear Algebra (with distance education students)
- Mathematical Statistics (with distance education students)
- Senior Project

Semester courses taught:

- College Algebra (with dual credit and distance education students)
- Plane Trigonometry
- Contemporary Mathematics

Elementary Statistical Methods (with dual credit and distance education students)
Calculus I/Calculus I Lab
Calculus II/Calculus II Lab
Calculus III/Calculus III Lab (multivariable and vector calculus)
Linear Algebra (with distance education students)
Differential Equations
Geometry (with distance education students)
Foundations of Higher Mathematics (with distance education students)
Mathematical Models in Ecology (with distance education students)
Mathematical Statistics (with distance education students)
Senior Project
Nominee for the Outstanding Teacher Award for 2018-2019 and 2019-2020

Research

Working with William Serrano, an undergraduate mathematics student, on his Senior Project involving the growth rates of jalapeno pepper plants under different environmental conditions.

Collaborated with Dr. Shandelle Henson, Andrews University; Dr. Robert Desharnais, California State University, Los Angeles; Dr. Joseph Galusha, Walla Walla University; Dr. James Watson, Washington Department of Fish and Wildlife; and Dr. James Hayward, Andrews University, on modeling predator-prey dynamics for bald eagles and seagulls in the Pacific Northwest.

Department Seminars presented:

An Introduction to Mathematical Population Models (Fall 2019)

Predator-prey dynamics of bald eagles and glaucous-winged gulls at Protection Island, WA (Spring 2019)

Difference Equations and Deterministic Chaos (Spring 2018)

Transient predator-prey cycles in bald eagles and glaucous-winged gulls at Protection Island, WA (Fall 2017)

Developing a mathematical model for a predator-prey system: bald eagles and seagulls in the Pacific Northwest (Spring 2017)

How a Pure Mathematician and the Binomial Theorem Changed the Study of Population Genetics (Fall 2016)

An Introduction to the Modeling of Infectious Diseases (Spring 2016)

Is there a connection between the Fibonacci sequence and the Golden Ratio? (Fall 2015)

Using Matrices and Vectors to Model Populations (Spring 2015)

An Introduction to Difference Equations and Deterministic Chaos (Fall 2014)

Service

Department committee serving on:

Assistant Professor of Computer Science Search

Department committees served on:

Assistant Professor of Computer Science Search

Assistant Professor of Computer Science (Gaming Technology) Search

Mathematics Lecturer Search (chair)

University councils serving on:

Athletics
Faculty Assembly Executive

University committees serving on:

Core Curriculum Subcommittee for Core Objectives Scoring Rubrics
McNair-Tafoya Symposium Review

University committee served on:

Sully Reads
University Scholarship

Serving as Parliamentarian for the Faculty Assembly.

Served as Secretary/Treasurer for the Faculty Assembly.

Participated in Academic Assessment Peer Reviews.

Edited one-third of the SRSU Compliance Report for SACSCOC accreditation.

Departmental representative/presenter at fall and spring Sully Showcases (on-campus undergraduate student recruitment events)

Reviewed and edited a Cyber Security presentation for a computer science colleague.

Helped at the Federal Government Employee Appreciation Dinner.

Judge at the Mathematical Association of America undergraduate student poster sessions at the 2018 and 2019 Joint Mathematics Meetings.

Reviewed paper for publication for:

Journal of Biological Dynamics

January 2014 to May 2014

Visiting Assistant Professor of Mathematics
Department of Computer Science and Mathematics
Sul Ross State University
Alpine, TX

Teaching

Semester courses taught:

Introduction to University Mathematics
University Algebra
Geometry

Research

Department Seminar presented:

Using Dynamical Systems To Model Populations

September 2012 to December 2013

Mathematics Tutor
Newberg Center
Portland Community College
Newberg, OR

Held regular tutoring hours each week where students from any mathematics course could come by for help. Worked with students taking Basic Mathematics, Beginning Algebra, Intermediate Algebra, College Algebra, Calculus, and Statistics courses.

September 2010 to December 2013

Adjunct Instructor of Mathematics
Department of Mathematics and Department of College Success Skills
Portland Community College
Newberg, OR and Portland, OR

Teaching

Quarter courses taught:

Basic Mathematics
Introductory Algebra - First Term
Introductory Algebra - Second Term
Intermediate Algebra
College Algebra
Statistics I

Service

Wrote letters of recommendation for students.

January 2010 to May 2010

Adjunct Instructor of Mathematics
Department of Mathematics, Computer Science, and Engineering
George Fox University
Newberg, OR

Teaching

Semester course taught:
College Algebra

August 2005 to July 2009

Associate Professor of Mathematics
Department of Mathematics, Computer Science, and Engineering
George Fox University
Newberg, OR

Teaching

Semester courses taught:
World of Mathematics
College Algebra

Precalculus
Calculus I, II, III (including multivariable and vector calculus)
Discrete Mathematics
Differential Equations with Linear Algebra
Differential Equations
Linear Algebra
Probability
Modern Geometry
Senior Thesis (as an independent study, 1 undergraduate student)
Curriculum development: Added a Real Analysis course to the mathematics course offerings, revised the Differential Equations and Linear Algebra courses, and updated and revised the mathematics major.

Research

During Summer 2007 worked with Kimberly Cullen, an undergraduate mathematics student, on an individual research project entitled Periodically Pulsed Population Replenishment in an SEIR Model for Childhood Diseases. This work was supported by a grant she received from the Richter Scholars Program. During Fall Semester 2007 she continued working on this project as her senior thesis.

Service

Judge for the student poster session at the 2007 Annual Meeting of the Society for Mathematical Biology.
Served on the Peer Review committee for 1 mathematics faculty member.
Faculty advisor for 4 mathematics majors.
Advisor at Genesis (summer registration events for incoming freshmen students)
Departmental representative to Bruin Preview (on-campus undergraduate student recruitment events)
University committee served on:
Undergraduate Scholarships
Wrote letters of recommendation for students.
Employee leader for the 2008 Serve Day trip to the Portland Rescue Mission.
Employee leader for the 2007 Spring Serve trip to Lapwai, Idaho.

August 2002 to July 2005

Assistant Professor, Associate Professor (promoted 2003), and Department Chair
Department of Mathematics
University of Montana-Western
Dillon, MT

Teaching

Semester courses taught:
Beginning Algebra

Mathematics for Elementary Teachers
Probability and Linear Mathematics
Trigonometry and Complex Numbers
Precalculus
Calculus I, II, III (including multivariable and vector calculus)
Linear Algebra

Experience One (block) semester courses taught:

Intermediate Algebra
Mathematics for the Liberal Arts
Probability and Linear Mathematics

Curriculum development: Worked on redesigning the entire mathematics curriculum as well as the secondary education mathematics major, secondary education mathematics minor, and the elementary education mathematics emphasis area degree programs for the conversion from the traditional semester system to the Experience One (block) semester system. The University of Montana-Western switched to the Experience One semester system in Fall 2005. (In the Experience One semester system students take one course at a time and each course meets for 3 hours a day for 18 days.) Also worked on designing a secondary education mathematics broadfield degree program.

Research

Continued work done on periodically pulsed chemostat models.

Furthered work done in PhD dissertation Examination of Dynamical Behavior and Estimation of Toxicant Levels in Chemically Stressed Population Models.

Service

Chair of the Department of Mathematics

Mathematics/Science Upward Bound Mathematics Instructor

Served on the Teacher Education Program portfolio committee for 1 secondary education mathematics student.

Faculty advisor for 12 students (4 secondary education mathematics majors, 2 secondary education majors, 3 elementary education majors, 1 equine studies major, and 2 undeclared majors).

Student recruitment presentation at Kaimuki High School (Honolulu, Hawaii).

Wrote letters of recommendation for students.

University committees served on:

Faculty Senate (departmental representative)

Mathematics Search (chair)

Visiting Assistant Professor Search (chair)

Program in Arts and Sciences (departmental representative)

Reviewed papers for publication for:

Journal of Theoretical Biology

Theoretical Population Biology

September 1996 to July 2002

Assistant Professor of Mathematics (received tenure 2002)
Department of Mathematics and Computer Science
Georgia Southern University
Statesboro, GA

Teaching

Quarter courses taught:

- Precalculus
- Calculus I, II, III
- Applications of Linear Algebra
- Differential Equations
- Mathematical Models and Applications (undergraduate/graduate course)
- Research Project in Mathematics (1 graduate student)

Quarter course developed and taught:

- Mathematical Models in Population Ecology (undergraduate/graduate course)

Semester courses taught:

- College Algebra
- Precalculus
- Survey of Calculus (calculus for business majors)
- Calculus I, II, III (including multivariable and vector calculus)
- Differential Equations
- Mathematical Modeling (as an independent study, 1 undergraduate student)
- Research Project in Mathematical Ecology (1 undergraduate student)
- Senior Thesis (as an independent study, 1 undergraduate student)

Semester course developed and taught:

- Mathematical Models in Population Ecology I (undergraduate/graduate course)

Semester courses developed (as part of Undergraduate Research Committee):

- Senior Research Project
- Undergraduate Seminar

Curriculum development: Worked on redesigning the entire mathematics curriculum and the mathematics major degree programs for the conversion from the quarter system to the semester system. Georgia Southern University switched from the quarter system to the semester system in Fall 1998.

Research

Collaborated with Dr. Sophie George of the Department of Biology on a mathematical model to describe and explain data she collected on the reproductive strategies of seastars off the coast of Washington state.

Continued work done with Angel Abney (Masters student) and Carrie Williams (undergraduate student) on periodically pulsed chemostat models.

Furthered work done in PhD dissertation Examination of Dynamical Behavior and Estimation of Toxicant Levels in Chemically Stressed Population Models.

Chairperson of Angel Rowe's Masters thesis committee. Her thesis, Predation and Competition in a Periodically Pulsed Chemostat, was completed in June

1998.

Member of Thomas Park's Masters thesis committee. His thesis, Alternative Forms of Seasonal Variation in Childhood Epidemics, was completed in June 1998.

Member of Verlynda Slaughter's Masters thesis committee. Her thesis, Interior-Point Method for a Class of Conic Quadratic Programming Problems, has not been completed.

During Summer 1999 worked with Carrie Williams, an undergraduate mathematics student, on an individual research project entitled Survival of a Consumer with a Periodic Feeding Schedule in a Periodically Pulsed Mass-Action Chemostat. During the academic year 1999-2000 she continued working on this project as her senior thesis.

Service

Reviewed papers for publication for:

Journal of Nonlinear Analysis

Electronic Journal of Differential Equations

Natural Resource Modeling

Theoretical Population Biology

Reviewed book proposal (upper level undergraduate mathematical modeling text) for CRC Press.

Judge at the MAA-CUPM undergraduate student poster sessions at the 2000, 2001, and 2002 Joint Mathematics Meetings.

Co-organized AMS Special Session at 2001 Joint Mathematics Meetings.

University committee served on:

Mathematics Education Advisory

College of Science and Technology committee served on:

Dean's Advisory

Departmental committees served on:

Calculus (chair)

Center for Applied Mathematical Sciences

Faculty Search

Graduate (graduate program)

Foundation Grant (chair, member)

Mathematics (undergraduate program)

Mathematics Tournament

Technical Reports

Undergraduate Research (chair, member)

Departmental advisor for half of the mathematics majors (over 25 students).

Served on 4 MEd in mathematics comprehensive examination committees.

Edited papers for publication for mathematics and computer science colleagues.

Faculty advisor for one of the Georgia Southern University's teams entered in COMAP's 2000 Mathematical Contest in Modeling competition.

Wrote letters of recommendation for students.

Faculty mentor for new faculty members.

Scorekeeper at the annual Georgia Southern University mathematics tournament

for high school and middle school students from southeast Georgia.

August 1992 to August 1996

Graduate Teaching Associate and Graduate Research Associate
Department of Mathematics
University of Tennessee, Knoxville
Knoxville, TN

Teaching

Semester courses taught:

Precalculus I

Biocalculus I, II (calculus for life science majors)

Research

Under the supervision of Dr. Thomas Hallam worked on a retrospective risk assessment of an individual-based *Daphnia* population model.

Service

Senator for the College of Arts and Sciences to the Graduate Student Association.

June 1990 to June 1992

Graduate Teaching Assistant and Graduate Research Assistant
Department of Applied Mathematics
University of Washington
Seattle, WA

Teaching

Quarter courses assisted:

Partial Differential Equations

Vector Calculus and Complex Variables

Calculus of Variations (graduate course)

Research

Under the supervision of Dr. Mark Kot worked on a periodically pulsed predator-prey chemostat model.